What is claimed is:

1. A method for treating a mammal susceptible to, suffering from, suspected of having or recovering from a disease impacted by tissue factor (TF), the method comprising administering to the mammal a therapeutically effective amount of at least one TF blocking compound to treat the disease.

2. The method of claim 1, wherein the disease is selected from the group consisting of a cardiovascular disease, a blood coagulation disorder, a cell proliferation disorder, post-operative complication, an immune disorder, atherosclerosis, inflammation or cancer.

3. A method of blocking or inhibiting tissue factor-dependent activation of factor X and/or factor IX, comprising contacting tissue factor with a TF blocking compound to thereby inhibit formation of a functional complex of factor X or factor IX with tissue factor or TF VIIA.

4. The method of claim 3 wherein the TF blocking compound binds to tissue factor to thereby inhibit formation of the functional complex.

5. The method of any one of claims 1-4 wherein the tissue factor blocking compound exhibits an IC_{50} of less than about 100 μM in a standard assay for measuring TF/VIIa-dependent factor X activation.

6. The method of any one of claims 1-4 wherein the tissue factor blacking compound exhibits an IC_{50} of about 200 μM or less in a standard assay for measuring TF/VIIa-dependent factor IX activation.

7. The method of any one of claims 1-4 wherein the tissue factor compound comprises at least one phosphonate group.

8. The method of any one of claims 1-4 wherein the tissue factor compound comprises at least one bis-phosphonate group.

9. The method of claim 7 ~~or 8~~ wherein the tissue factor compound further comprises an optionally substituted carbocyclic aryl group, or an optionally substituted heteroaryl group.

10. The method of claim 7 ~~or 8~~ wherein the tissue factor compound further comprises an optionally substituted phenyl group.

11. The method of any one of claims 1-4 wherein the TF blocking compound is of the following Formula I:

$$Ar\text{-}(CXY)_m\text{-}(Het)_{0\text{ or }1}\text{-}(CX^1Y^1)_n\text{-}C(Z)_p\text{-}(PO_3)_{3-p}$$

I

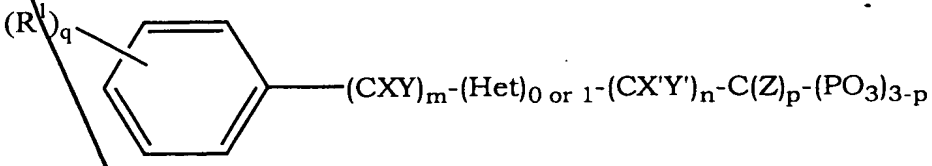
wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

Het is optionally substituted N, O, S, S(O) or $S(O_2)$;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; and pharmaceutically acceptable salts thereof.

12. The method of any one of claims 1-4 wherein the TF blocking compound is of the following Formula II:



II

wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

Het is optionally substituted N, O, S, S(O) or $S(O_2)$;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl ~~preferably~~; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

each R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

13. A method for identifying a candidate TF blocking compound, the method comprising screening the compound in at least one primary screening assay using purified tissue factor; and selecting the TF blocking compound.

14. The method of claim 13 further comprising screening the candidate TF blocking compound in at least one secondary screening assay.

15. The method of claim 13 or 14 comprising screening the candidate TF blocking compound in a standard *in vitro* assay for measuring TF/VIIa-dependent factor X activation.

16. The method of claim 13 or 14 comprising screening the candidate TF blocking compound in a standard *in vitro* assay for measuring TF/VIIa dependent factor IX activation.

17. The method of claim 13 wherein the screening assay is a standard prothrombin time (PT) assay.

18. The method of any of claims 13-17 wherein the purified tissue factor is lipidated recombinant human tissue factor.

19. A tissue factor (TF) blocking compound exhibiting an IC_{50} of less than about 100 μM in a standard assay for measuring TF/VIIa-dependent factor X activation.

20. The compound of claim 19 further exhibiting equivalent or greater than about 70% inhibition in the assay.

21. The compound of claim 19 further exhibiting an IC_{50} of about 200 μM or less in a standard assay for measuring TF/VIIa-dependent factor IX activation.

22. The compound of claim 19 further exhibiting at least about a 5% to 20% increase in plasma clotting time relative to a control in a standard prothrombin time (PT) assay.

23. The compound of claim ~~19 further~~ exhibiting at least 70% inhibition in the assay for measuring TF/VIIa-dependent factor X activation and at least of the following activities: 1) an IC_{50} of less than about 100 μM in a standard assay for measuring TF/VIIa-dependent factor IX activation, and 2) at least about a 5% to 20%

increase in plasma clotting time relative to a control in a standard prothrombin time (PT) assay.

24. The compound of claim 19 wherein the compound is represented by the following Formula I:

$$Ar\text{-}(CXY)_m\text{-}(Het)_{0\text{ or }1}\text{-}(CX^1Y^1)_n\text{-}C(Z)_p\text{-}(PO_3)_{3-p}$$

I

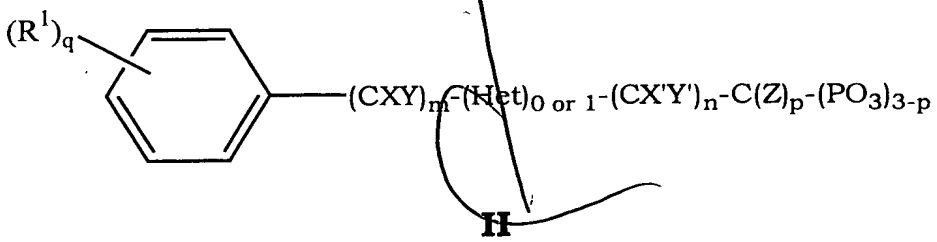
wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

Het is optionally substituted N, O or S;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; and pharmaceutically acceptable salts thereof.

25. The compound of claim 19 wherein the compound is represented by the following Formula II:



II

wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

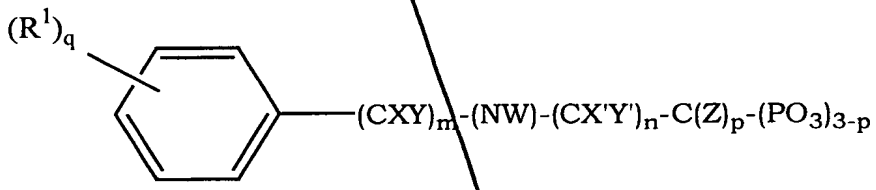
Het is optionally substituted N, O, S, S(O) or $S(O_2)$;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

each R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

26. The compound of claim 19 wherein the compound is represented by the following Formula III:



III

wherein each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted

alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

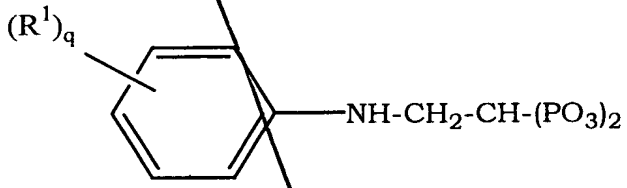
m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5;

W is hydrogen, optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

27. The compound of claim 19 wherein the compound is represented by the following Formula IIIa:



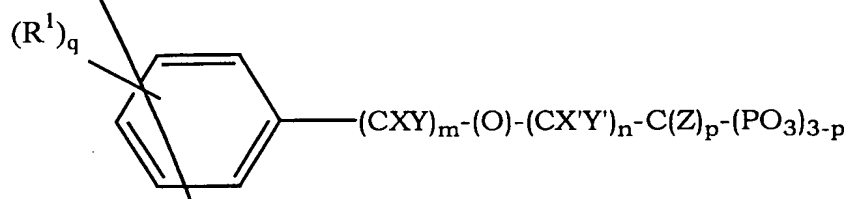
IIIa

wherein R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally

substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl; and

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

28. The compound of claim 19 wherein the compound is represented by the following Formula IV:



IV

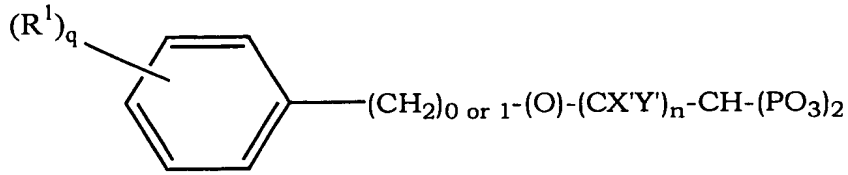
wherein each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

29. The compound of claim 19 wherein the compound is represented by the following Formula IVA:



IVa

wherein each X' and each Y' is independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

n is an integer of from 0 to 4; q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

30. A compound of any one of claims 24 through 27 wherein at least one R^1 is hydroxy and m is 1 or 2.

31. A pharmaceutical composition comprising a compound of any one of claims 19 to 30 and a pharmaceutically acceptable carrier.

32. A method for treating a mammal suffering from or susceptible to a disease impacted by tissue factor, comprising administering to the mammal an effective amount of a compound or composition of any one of claims 19-31.

33. A method for treating a mammal suffering from or susceptible to a cardiovascular disease, a blood coagulation disorder, a cell proliferation disorder, post-operative complication, an immune disorder, atherosclerosis, inflammation, or cancer, comprising administering to the mammal an effective amount of a compound or composition of any one of claims 19-31.

34. A method of inhibiting blood coagulation in a mammal, comprising administering to the mammal an effective amount of a compound or composition of any one of claims 19 to 31.

35. The method of claim 34 wherein the mammal is suffering from, suspected of having, or recovering from a thrombosis.

36. The method of claim 34 wherein the mammal is suffering from, susceptible to, or recovering from restenosis associated with an invasive medical procedure.

37. The method of claim 34 wherein the invasive medical procedure is angioplasty, endarterectomy, deployment of a stent, use of catheter, graft implantation or use of an arteriovenous shunt.

38. The method of claim 34 wherein the mammal is suffering from, at risk of developing, or recovering from a thromboembolic condition associated with cardiovascular disease, an infectious disease, a neoplastic disease or use of a thrombolytic agent.

39. The method of any one of claims 34-38 wherein at least one of an anti-platelet composition, thrombolytic composition or an anti-coagulant composition is administered in combination with a tissue factor blocking compound exhibiting an IC_{50} of less than about 100 μM in a standard assay for measuring TF/VIIa-dependent factor X activation.

40. A method of treating or preventing a thromboembolic disorder in a mammal, comprising administering to the mammal an effective amount of the TF blocking compound of any one of claims 19-31.

41. The method of claim 40 wherein the mammal is suffering from, at risk developing, or is recovering from a thromboembolic condition associated with cardiovascular disease, an infectious disease, a neoplastic disease or use of a thrombolytic agent or an anti-platelet agent.

42. The method of claim 40 wherein at least one of an anti-platelet, thrombolytic, or an anti-coagulant composition is administered in combination with a tissue factor blocking compound exhibiting an IC_{50} of less than about 100 μM in a standard assay for measuring TF/VIIa-dependent factor X activation.

43. The method of any one of claims 32-42 wherein the mammal is a human.

44. A compound of the following Formula I:

$$Ar\text{-}(CXY)_m\text{-}(Het)_{0 \text{ or } 1}\text{-}(CX^1Y^1)_n\text{-}C(Z)_p\text{-}(PO_3)_{3-p}$$

I

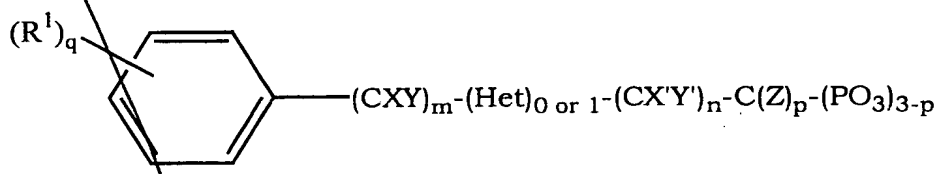
wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

Het is optionally substituted N, O, S, S(O) or $S(O)_2$;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; and pharmaceutically acceptable salts thereof.

45. A compound of claim 44 having the following Formula II:



II

wherein Ar is optionally substituted carbocyclic aryl or optionally substituted heteroaryl;

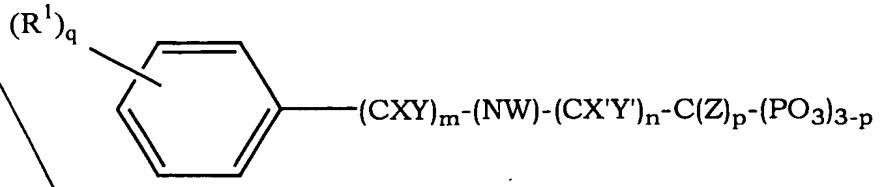
Het is optionally substituted N, O, S, S(O) or $S(O_2)$;

each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

each R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

46. A compound of claim 44 having the following Formula III:



III

wherein each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

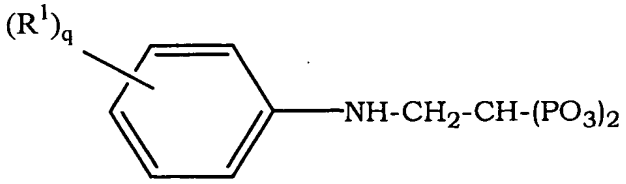
m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5;

W is hydrogen, optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

47. A compound of claim 44 having the following Formula IIIa:

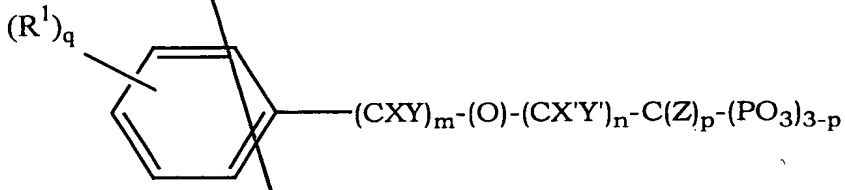


IIIa

wherein R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl; and

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

48. A compound of claim 44 having the following Formula IV:



IV

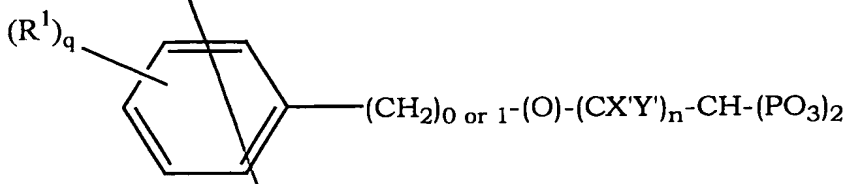
wherein wherein each X, each Y, each X', each Y' and each Z are each independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

m and n each is independently an integer of from 0 to 4; p is 1 or 2; q is an integer of from 0 to 5;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl;

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

49. A compound of claim 44 having the following Formula IVa:



IVa

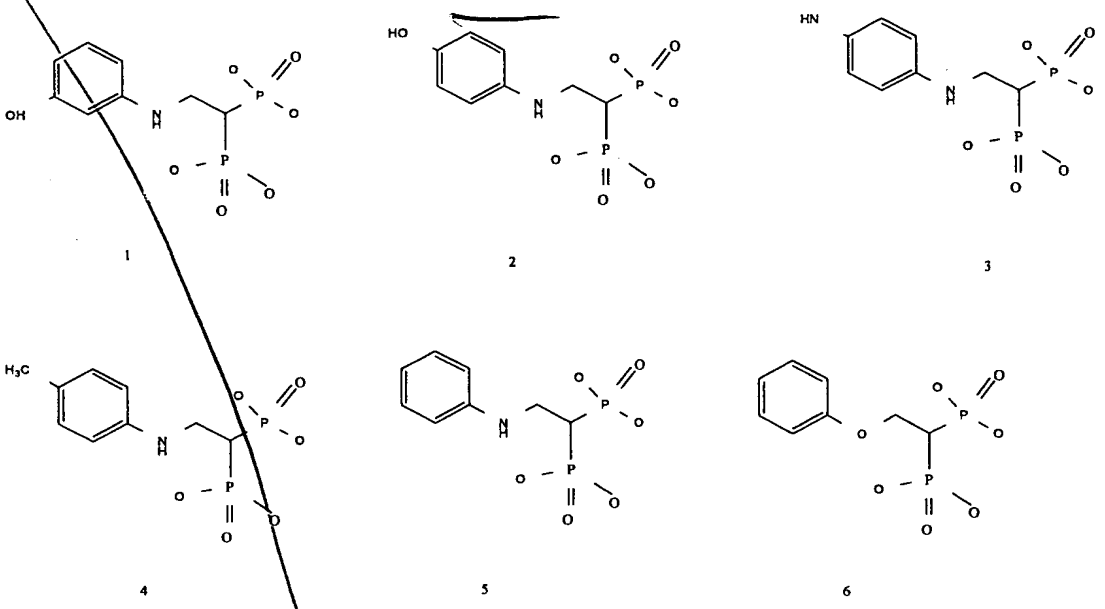
wherein each X' and each Y' is independently hydrogen; halogen; hydroxyl; sulfhydryl; amino; optionally substituted alkyl preferably; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; or optionally substituted alkylamino;

R^1 is independently halogen; amino; hydroxy; nitro; carboxy; sulfhydryl; optionally substituted alkyl; optionally substituted alkenyl; optionally substituted alkynyl; optionally substituted alkoxy; optionally substituted alkylthio; optionally substituted alkylsulfinyl; optionally substituted alkylsulfonyl; optionally substituted alkylamino; optionally substituted alkanoyl; optionally substituted carbocyclic aryl; or optionally substituted aralkyl; and

q is an integer of from 0 to 5; and pharmaceutically acceptable salts thereof.

50. A compound of any one of claims 44 through 46 wherein at least one R^1 is hydroxy and m is 1 or 2.

51. A compound of claim 44, that is:



or a pharmaceutically acceptable salt thereof.

52. A method of inhibiting blood coagulation in a mammal, comprising administering to the mammal an effective amount of a compound of any one of claims 44 to 51.

53. The method of claim 52 wherein the mammal is suffering from or suspected of having a thrombosis.

54. The method of claim 52 wherein the mammal is suffering from or susceptible to restenosis associated with an invasive medical procedure.

55. The method of claim 54 wherein the invasive medical procedure is angioplasty, endarterectomy, deployment of a stent, use of catheter, graft implantation or use of an arteriovenous shunt.

56. The method of claim 52 wherein the mammal is suffering from or at risk of developing a thromboembolic condition associated with cardiovascular disease, an infectious disease, a neoplastic disease or use of a thrombolytic agent.

57. The method of any one of claims 52 to 56 wherein an anti-platelet composition, a thrombolytic composition or an anti-coagulant composition is administered in combination with a compound of Formula I.

58. A method of treating or preventing a thromboembolic disorder in a mammal, comprising administering to the mammal an effective amount of a compound of any one of claims 44 to 51.

59. The method of claim 58 wherein the mammal is suffering from or at risk developing a thromboembolic condition associated with cardiovascular disease, an infectious disease, a neoplastic disease or use of a thrombolytic agent or an anti-platelet agent.

60. The method of claim 58 or 59 wherein an anti-platelet composition, a thrombolytic composition or an anti-coagulant composition is administered in combination with a compound of Formula I.

61. A method of treating a mammal suffering from or susceptible to atherosclerosis, comprising administering to the mammal an effective amount of a compound of any one of claims 44 to 51.

62. The method of any one of claims 52 to 61 wherein the mammal is a human.

63. A pharmaceutical composition comprising a compound of any one of claims 44 through 51 and a pharmaceutically acceptable carrier.

add C16
add D3